Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

leaves, in the proportion of about one in eight hundred, form a cup by a folding together and union of the basal edges, thus obliterating the usual sinus. No other elm in the vicinity presents this phenomenon.

I have seen within a few days, in Phenix, R. I., a fine plant of *Lilium superbum* with this peculiarity: all the flowers, and there were many, instead of the normal coloration, exhibited a clear yellow, without spots of any kind. I hope to secure bulbs, when I shall attempt to perpetuate this elegant sport.

W. Whitman Bailey.

The Long Island Station for Magnolia glauca.—Near the end of last June, Mr. E. S. Miller, of Wading River, and I went in search of the locality at which the *Magnolia glauca* had been detected. There was no difficulty whatever in finding the place, as it is clearly described in Mr. W. H. Rudkin's note in the Bulletin for August, 1883, (p. 95.) "Tuttle's Pond," a long, narrow mill-pond, formed by damming a brook, has, at its northern end, a swamp of several acres, through which passes the Long Island Railroad, which has here a culvert through which the brook enters the swamp. This is about two miles east of Speonk Station.

There were a few red maples and swamp laurels (*Kalmia angustifolia*), and scattered amongst these, in large numbers, were the magnolias, many of them from 15 to 20 feet in height and of remarkably vigorous growth. We were a few days too early to find the flowers fully out, and had to content ourselves with buds only.

G. M. Wilber.

Crantzia lineata.—I found this summer, in our salt meadows, *Crantzia lineata*, Nutt., which Mr. Peck (the State Botanist) says he considers a very rare plant in New York.

Wading River. E. S. Miller.

Botanical Notes.

Production of Male and Female Plants.—Dr. H. Hoffmann (*Bot. Zeitung*, xliii., pp. 145–153, 161–169) has attempted to determine the conditions under which male or female individuals are produced in the case of the following diœcious plants: *Lychnis diurna* and *vespertina*, *Valeriana dioica*, *Mercurialis annua*, *Rumex Acetosella*, *Spinacia oleracea* and *Cannabis sativa.* He finds that in most, if not in all, of these cases, dense sowing increases the proportion of male plants produced, and this results from an insufficient supply of nutriment. As a general law, the production of male plants is promoted by the want of an adequate supply of food when in an embryonal condition. —*Jour. Roy. Microscop. Soc.*

Classification of Fungi.—In Cohn's Kryptogamen-Flora von Schlesien, Dr. J. Schröter proposes the division of the Fungi into the three following groups: I. Myxomycetes; II. Schizomycetes (parallel with the Phycochromaceæ; and III. Euomycetes, distinguished by their spores being formed by a sexual act.

The Euomycetes are again divided into seven families, viz.:

(1) Chytridiei; (2) Zygomycetes; (3) Oomycetes (related to the Siphoneæ); (4) Ascomycetes; (5) Uredinei; (6) Auriculariei; and (7) Basidiomycetes.

The Basidiomycetes are divided into (1) Tremellinei; (2) Dacromycetes; and (3) Eubasidiomycetes, which again are made up of (*a*) Hymenomycetes, (*b*) Phalloidei, and (*c*) Gasteromycetes.—*Jour. Roy. Microscop. Soc.*

Development of the Apothecia of Lichens.—Dr. M. Fünfstück has followed the development of the apothecia in three genera, *Peltigera*, *Peltidea* and *Nephroma*. In *Peltigera canina* an interval of several years passes between the first formation of an apothecium and the production of the first ripe spores. In *Peltigera* and *Peltidea* there are no spermogonia.

In *Peltigera malacea* the apothecia originate as extremely minute roundish dots on the margin of the thallus, where a few filaments, irregularly coiled into rosettes, the ascogonia, are formed close beneath the cortical layer, on a level with the gonidial zone; they are simply portions of the ordinary hyphæ, which increase in length by apical growth, while the ascogonial cells increase at the same time in size by intercalary growth. The cortical fibres and the ascogonial tissue are strongly differentiated from the first. The next period of development begins with the formation of the first paraphyses, commencing in the cortical layer of the apothecium. A mass of young cortical fibres in the middle of this layer displays delicate shoots, which develop into the paraphyses. These gradually extend over the entire cortical layer of the apothecium, new ones being formed between the older. At the same time, the separate ascogonial cells shoot out and form the ascogenous hyphal tissue. The process of disorganization of the ascogonia runs parallel with the formation of this tissue, and finally the asci are formed as bulgings of the ascogenous hyphæ; the outer part of the cortical layer bursts, and thus is formed the "excipulum thallodes" of lichenologists. The formation of the apothecium is not the result of any sexual process, the strong differentiation of the ascogenous hyphæ from those which develop into paraphyses being traced back to the youngest stage. The author regards the process as the same as that in *Podosphæra* among Ascomycetes, apogamy with rudimentary sexual organs.

The processes are nearly the same in *Peltidea aphthosa* and *venosa*, while in *Nephroma tomentosum* and *lævigatum* there are important deviations. In these species the author always found spermogonia, though always in a rudimentary condition. The first apothecial layer is formed beneath a thick, close, cortical layer in the margin of the thallus by a number of large, thin-walled cells arranged in a moniliform manner, and from the analogy of *Peltigera* and *Peltidea*, regarded as ascogonia, developed gradually from ordinary hyphæ of the thallus. The entire structure is enveloped in a dense hyphal tissue, which gradually disappears as the fructification develops; and the apothecia of *Nephroma* are hence described as gymnocarpous. The formation of the ascogonia was not clearly observed. The mode of formation of the paraphyses is similar to that in *Peltigera*, but takes place later. The paraphyses and asci are always formed on the under side of the thallus, so that the young apothecia at first face the substratum ; their position is subsequently reversed by a strong curving of the fertile layer. We have therefore in these lichens phenomena of apogamy, similar to those that have been observed in the Ascomycetes.—*Jour. Roy. Microscop. Soc.*

The Coloring Matter of Flowers and Fruits.—In an interesting communication on the subject of coloring matters in flowers and fruits, contributed to a society at Wurzburg (*Gard. Chron.*, June 20th, p. 794), Dr. A. Hansen gives reasons for supposing that a relatively small number of pigments suffices for the production of the apparently endless variety of tints. Taking flowers in the first instance, and setting aside chlorophyll green as being rarely met with in them, he recognizes three groups of colors, the yellows, the reds, and the blues and violets. White is due merely to the reflection of light through colorless tissues containing air, and blacks are attributed to a concentration of violet pigments. The yellow pigments are mostly in combination with plasmatic substances, whilst the reds and blues and violets are generally found in the cell-sap. The yellow of flowers is said to form an insloluble compound with fatty matters, which it is thought might explain the comparative permanence of that color in plants. The pigments of different yellow flowers have been found to agree with each other so closely in respect to their spectra as to point to identity, and Dr. Hansen obtained by saponification with soda, and extraction with light petroleum spirit, a crystalline yellow pigment which corresponded in its behavior to the "lipochrome" obtained by Krukenberg from the animal kingdom. Orange is due to a denser deposit of the yellow pigment, the color in orange rind being referrible to the same substance as that in the petals of *Ranunculus repens*. The pigment in yellow dahlias and lemon rind, however, behaves differently, both chemically and spectroscopically; it is soluble in water and seems to be very similar to the pigment of *Æthalium septicum*, the yellow fungus or mould of rotten wood. The reds of flowers Dr. Hansen reduces to a single pigment; the description of which, so far as it goes, appears to correspond to that given some years since by Mr. Harold Senier of a coloring matter isolated by him from the petals of *Rosa Gallica*. The varying intensity of the colors of roses, carnations and pæonies, it is thought might be due to the presence of acids, which, according to Mr. Senier, would deepen the shade of the red coloring matter, whilst the scarlets and brick-reds of poppies, scarlet lilies, and dog-rose hips are attributed to the modifying influence of some yellow pigment (lipochrome) present. The blue and violet pigments, Dr. Hansen looks upon as derivatives from the red, and in support of this view it is pointed out that certain flowers pass from red to blue or violet. It is also known that the pæony red is changed to violet by salts of iron or sodium phosphate, whilst gardeners produce blue hydrangeas by adding iron to the soil. As to fruit and leaves, the change of color which takes place in the autumn is accounted for by the decomposition of chlorophyll, with the formation of new pigments, or the unmasking of yellow (lipochrome) previously dominated by the chlorophyll. Dr. Hansen therefore assumes that there are only four fundamental plant pigments—the two yellows and the red of flowers and chlorophyll green.

Rhubarb Culture in the United States.—Mr. J. W. Colcord, of Lynn, Massachusetts, who, during the last few years has been turning his attention to the acclimatization of medicinal plants in the United States, has been further experimenting as to the value of the leaf stalks of the home-grown *Rheum palmatum* as an esculent. He reports that plants raised from seed sown last May have now leaves two feet in length, with petioles an inch in diameter; and that these have been found to be equal in tenderness and flavor to the best pie rhubarb in the market. As there are indications that the therapeutic value of the home-grown root will also be established, Mr. Colcord looks forward to the utilization of the plant (which proves to be hardy) in both directions.

Two new Terms have recently been added to the already overburdened terminology of botany. Dr. F. Krasan has noticed that where the leaves of the oak are attacked by the *Orchestes Quercus*, the deposit of the eggs of the insect arrests the growth of the leaves attacked, which become thicker and more rigid than the ordinary leaves, and that in June these are followed by a second growth of leaves of very large size, and later by a growth of normal leaves. To these phenomena he gives the name of " pachyphyllosis " and "megalophyllosis." The distortions produced may, he believes, in some cases become hereditary and cause the appearance of apparently new species, as in the case of *Quercus brachyphylla*, Kotschy, probably derived from *Q. pubescens*. Similar changes occur in *Abies* and *Thymus serpyllum*.

Peptonizing Ferment of Ficus.—Dr. A. Hansen, having examined the latex of the common fig, *Ficus carica*, confirms the statements of previous observers concerning the presence of a peptonizing ferment in it. In its effect on fibrin and the coagulation of milk this ferment resembles pepsine. It also produces the diastasic reaction of the conversion of starch into sugar, and a syrup made from dried figs has the same peptonizing property as the latex. It is remarkable that no similar effect could be obtained from the milky juice of Euphorbiaceæ or of *Papaver somniferum*, *Chelidonium*, *Taraxacum* or *Scorzonera*, although the fluid secretion in the pitchers of *Nepenthes* possessed peptonizing properties similar to those of the latex of the fig tree.

The Qualities of Redwood (*Sequoia sempervirens*) are peculiar. Though light, soft, weak to resist a transvere strain, brittle, and easy to split, it excels oak in its power of resistance to the decomposing influences of the air and the soil. It is a little over a quarter of a century since the manufacture of redwood timber commenced, but the consumption is now enormous. In California it is preferred to any other lumber for all parts of the exterior of buildings, and is largely used also in the interiors. The roofs of almost all buildings in California, both in city and country, are covered with redwood shingles, while ruder erections are roofed with large rough shingles known as " shakes " throughout the State. It is the almost exclusive material for fence-posts, rails, telegraph poles, railway-ties, wine-casks, tanning and water-tanks, coffins and every purpose where durability is a greater requisite than strength. A novice in the country districts of California wonders why farmers wear gloves when moving a fence, but after a few of the sharp, needle-like splinters of the split rails have entered his hand and festered there, he wears gloves himself. Redwood shingles are coming into favor in the more eastern States which now use a large quantity of redwood timber.

The softness of the wood is the only objection that can be urged against its use in interior decorations. It is of a beautiful, clear light red color, and is susceptible of a good polish, but the ordinary varieties are so soft that the nail, even the knuckle, will make a dent. Yet, as it shrinks and swells less than any other wood, and neither checks nor warps, it is better fitted even for internal finish than many woods which are more used in the Atlantic States. The objection of softness does not apply to the knots or gnarls which grow on some tree trunks, and sometimes attain a diameter of eight or ten feet. These knots are full of tiny bird-eyes, are very hard, and, like bird's eye maple, are well adapted for ornamental cabinet-work, whether used solid or as veneer. Another ornamental variety much esteemed in California is the "curly" redwood, in which the grain is wavy throughout.

The best part of the redwood tree is the butt, the very part which it is, or rather was, the custom to leave in the ground to a height of several feet. Dark red, comparatively hard, heavy and close grained, these butts are indestructible by weather or by fire.

Redwood is a very poor fuel, for it contains little or no pitch. When dry and cut small it takes fire very easily, so much so that it makes good kindling, but a stoveful burns away in little time with little production of heat.

The wood of this *Sequoia* is much heavier than the wood of the *Sequoia gigantea* or big tree, the bark, usually deep-seamed, is often 12 to 18 inches thick: the cones or fruits are not more than an inch or an inch and a quarter, and the leaves small, flat, sharp-pointed, green above, and arranged in a row on each side of the twig which bears them.—*Southern Lumberman.*

Fossil Flora of the Rocky Mountain Region of Canada.—Dr. G. M. Dawson, in the *Transactions* of the Royal Society of Canada, describes a remarkable Jurasso-Cretaceous flora recently discovered by him in the Rocky Mountain regions of Canada, and also the intermediate groups of plants between this and the Middle Cretaceous. The oldest of these floras is found in beds which it is proposed to call the Kootanie group, from a tribe of Indians of the name which hunted over that part of the Rocky Mountains between the 49th and 52d parallels. Plants of this age have been found in the branches of the Old Man River, on the Martin Creek, at Coal Creek, and at one locality far to the northwest on the Suskwa River. The containing rocks are sandstones, shales and conglomerates, with seams of coal, in some places anthracitic. The plants found are conifers, cycads and ferns, the cycads being especially abundant and belonging to the genera *Dioonites*, *Zamites*, *Podozamites* and *Anomozamites*. Some of these cycadaceous plants, as well as some of the conifers, are identical with species described by Heer from the Jurassic of Siberia, while others occur in the Lower Cretaceous of Greenland. The almost world-wide *Podozamites lanceolatus* is very characteristic, and there are leaves of *Salisburia Sibirica*, a Siberian Mesozoic species, and branches of *Sequoia Smittiana*, a species characteristic of the Lower Cretaceous of Greenland. No dicotyledonous leaves have been found in these beds, whose plants connect in a remarkable way the extinct floras of Asia and America and those of the Jurassic and Cretaceous periods.

Merulius lacrimans—the Dry Rot.—A short time before his death, Prof. H. R. Goppert, of Breslau, in connection with the chemist, Professor Poleck, made a study of the *hausschwamm*—a fungus commonly known with us as dry rot, which had caused great injury to buildings in Northern Germany. The results of their combined studies now appear in a pamphlet by Professor Poleck (Der Hausschwamm, Breslau, 1885). The dry rot, *Merulius lacrimans*, seems to be unknown in a wild state in Germany, but is confined to woodwork of different kinds, and attacks by preference coniferous timber. Strange to say, the fungus does not usually infest old structures, but generally makes its appearance in comparatively new buildings; and a startling series of figures shows the amount of damage done in the region of Breslau. Chemical analyses by Poleck show that the *Merulius* is particularly rich in nitrogenous compounds and fat, which is rather remarkable when one considers the chemical constituents of the timber on which it grows. Injury to health, or even death, is said to result from exposure to air containing large quantities of the spores of the fungus; and several authenticated cases are reported. In a supplementary note, Poleck considers the relationship of *Merulius* to *Actinomyces*, a fungus which causes a characteristic disease in man and cattle; and he apparently comes to the conclusion that what is called *Actinomyces* is probably only the *Merulius* altered by the peculiar matrix on which it is growing. His statements on this point can hardly be called conclusive, or, in fact other than vague.

Botanical Literature.

A Revision of the North American Species of the Genus Scleria. By N. L. Britton, Ph.D. 8vo, pamph. pp. 8. (From the *Annals* of the New York Academy of Sciences, iii., 7.)

Criticisms on J. Kruttschnitt's Papers and Preparations relating to Pollen-tubes. By N. L. Britton. 8vo, pamph., pp. 10. (From the *Journal* of the New York Microscopical Society.)

The Grape-Rot. By Wm. Trelease. 8vo, pamph., pp., 9. (From *Transactions* of Wisconsin State Horticultural Society.)

Hypericum Japonicum, Thunb., *in Deutschland gefunden.* Von R. v. Uechtritz und P. Ascherson. 8vo, pamph., pp. 10. (From *Berichte* der Deutschen Botanischen Gesellschaft.)